Sea-Basing and the Maritime Pre-positioning Force (Future)

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SEA-BASING, defined as projecting joint operational independence in the largest maneuver area in the world, is one of the synergistic operational concepts the Navy-Marine Corps team will use to enhance their capabilities to fight and win the littoral conflicts of the 21st century.[1] Sea-basing is a principal enabling concept supporting the Chief of Naval Operations' (CNO's) Sea Power 21, the U.S. Marine Corps' expeditionary maneuver warfare, operational maneuver from the sea (OMFTS), ship-to-objective maneuver (STOM), and other expeditionary concepts.[2]

Sea-basing allows the joint force commander (JFC) the means to accelerate deployment and employment times of naval power-projection capabilities and the enhanced seaborne positioning of joint assets.[3] Sea-basing minimizes the need to build a logistics stockpile ashore, reduces the burden on sea and airlift assets, and allows forward positioning of joint forces.[4]

The overall intent of sea-based operations is to use the flexibility and protection the sea base provides to minimize the Marine air-ground task force's (MAGTF's) presence ashore.[5] The challenge of sea-basing lies in its logistical sustainment and the details of its implementation. The bases of sea-basing and its implementation are the maritime pre-positioning force (MPF), maritime pre-positioning force (enhanced) (MPF[E]), and MPF (future) (MPF[F]).

MPF and MPF(E)

The MPF, established in 1979, consists of 13 ships organized into 3 forward-deployed squadrons.[6] An MPF squadron (MPSRON) normally consists of four or five ships. The ships are privately owned. Three companies operate them, but the Department of Defense leases them. The ships handle container and roll-on/roll-off (RO/RO) operations. Each MPSRON supports a Marine expeditionary brigade (MEB) of approximately 17,000 marines. Each MPSRON is outfitted with weapons, equipment, and supplies sufficient to support an MEB-size MAGTF for up to 30 days. The supplies are pre-positioned at 3 locations (Diego Garcia, Guam, and the Mediterranean Sea).[7] In a contingency operation, at least one MPSRON can arrive at a directed location within 7 days of notification.[8]

An MPF(E) squadron is a standard MPF with an additional ship that carries Naval Mobile Construction Battalion ("Sea Bee") assets, a Navy fleet hospital, and an expeditionary airfield.[9] Two of the three MPSRONs are augmented with these assets.[10]

Historical approaches to amphibious logistics support of assault forces required initial supply and periodic re-supply of water, rations, ammunition, and fuel and depended on the concept of the "beachhead." A beachhead support area (BSA) stockpiled with all the requirements of the combat force becomes an attractive and easily located and attacked target.[11]

Current MPF doctrine is to pre-position large caches of supplies and oversize equipment at strategic locations.[12] Joint force personnel are then airlifted into theater and received at an aerial port of debarkation (APOD). At the same time, MPF ships loaded with equipment arrive at the sea port of debarkation (SPOD), which begins the reception, staging, onward movement, and integration (RSOI) cycle.

The joining of joint force personnel with their equipment in marshalling areas near the SPOD is the staging phase. Onward movement is accom-

plished when joint forces leave the staging area and move to assigned areas of operation. Integration occurs when the combat force commander places forces in his order of battle. Sustainment begins once the joint force is transported to the staging areas and continues until the campaign ends.

The existing MPF provides mobility and limited in-stream offloading capabilities.[13] Typical MPF operations require ports and airfields to offload cargo, which makes forces vulnerable.[14] The MPF concept, tested and validated during Operation Desert Shield through a fixed-port system, provided the first heavy armor capabilities in theater.[15] During Desert Shield, initial troops that deployed to the region were supported by equipment and supplies from MPF ships, which enabled forces to survive during the first critical weeks of the operation.[16]

The MPF(F) Mission

The MPF(F) is similar to the current MPF in that it will be a grouping of ships strategically located around the world. Each MPF(F) squadron will be loaded with all the equipment needed to support an MEB, able to transport that MEB's equipment anywhere in the world, and "be a family of ships, rather than a collection of ships of a single type."[17]

The MPF(F) will provide four functions that the present MPF cannot:

- At-sea arrival and assembly of units.
- Direct support of the MAGTF's assault echelon.
- Indefinite sea-based sustainment of the landing force.
- At-sea reconstitution and redeployment of the force.[18]

The MPF(F) will be able to unload its cargo in an improved port or over the beach in a joint logistics over the shore operation, which is essential since most threats to forces will come from areas of the world where there are no developed fixed-port systems.

Sea-based logistical concepts envision using the MPF(F) to support MAGTFs ashore executing STOM, a supporting piece of OMFTS that is the centerpiece of the CNO's vision for the 21st century.[19] Forces conduct maintenance, medical, and supply operations primarily from sea-based platforms. Joint and naval distribution replenishes the logistical infrastructure afloat. In essence, the ships become floating warehouses for deployed forces and operate afloat and ashore.[20] The logistics infrastructure is maintained afloat and replenished from ships arriving on station from the continental United States (CONUS) or support bases located nearer the operation.[21] In effect the MPF(F) is synonymous with sea-basing.[22]

Future Sea-Basing and MPF(F) Doctrine

Future sea-basing and MPF(F) doctrine is comparable to MPF doctrine. Equipment and materiel will be pre-positioned in several places around the world, but MPF(F) doctrine eliminates the requirement for access to secure ports and airfields.[23] Most flash points will be in the developing world's littorals, and most modern vessels are too big to enter unimproved ports. By using a platform at sea, the U.S. does not have to obtain permission from a foreign government to use a forward base or port, but can operate in international waters.[24]

Joint Logistics Functions

Function	Description
Supply	Acquire, manage, receive, store, and issue materiel to operating forces.
Maintenance	Inspect, test, service, classify, repair, replace, reclaim, modify, convert, calibrate, rebuild, and overhaul equipment for operating forces.
Health Services	Evacuate, hospitalize, medical logistics, casualty collection, health maintenance, casualty treatment, medical laboratory service, blood management, vector control, preventative medicine service, veterinary service, and dental service for personnel in operating forces.
Transportation	Move units, personnel, equipment, and supplies for operating forces.
Services	Aerial delivery, laundry, clothing exchange and bath, and graves registration for operating forces.
General Engineering	Construction, damage repair, and operation and maintenance of facilities for operating forces.

Forklifts and other equipment are brought ashore on barges as the maritime pre-positioning ship *Sergeant Matej Kocak* (T-AK-3005) offloads during an exercise at Roosevelt Roads, Puerto Rico.

US Navy

MPF(F) enables sea-based RSOI.[25] MPF(F) ships will be able to conduct at-sea arrival, assembly of units, and selective offloading of equipment needed for the objective operation.[26] Joint forces arriving by high-speed airlift or sealift from the U.S. or advanced bases will meet the MPF(F) platforms while en route to the objective area.[27] The MPF(F) combines the capacity and endurance of sealift with the speed of airlift to rapidly deploy MAGTFs to objective areas with the capability for indefinite sea-based sustainment.[28]

Accelerated deployment and employment times will permit the projection of ground combat power within days rather than weeks or months.[29] Efficient mating of marines with their equipment will permit elements of the MPF(F) and MAGTF to arrive in the objective area integrated and prepared for operations. The joint force can implement STOM deep inland in the enemy's rear, which is a significant advantage over traditionally phased amphibious operations.[30]

The MPF(F) will be used as an initial stock of war supplies for major ground combat operations. Once a corps or larger ground force establishes itself ashore, the MPF(F) can remain in theater as a floating warehouse, return to CONUS to participate as additional sealift, or load its equipment for staging for follow-on missions.

The MPF(F) will provide an additional aspect of force protection by using the sea as a buffer against an asymmetrical threat. The distance from shore will allow combatant vessels accompanying the MPF(F) to acquire and defeat incoming threats.[31] The MPF(F) will shift force-protection concerns from the ships themselves to the transfer system that ferries troops and supplies to the objective.[32]

The MPF(F) in an area of operation will provide a sea-based staging area and added maneuver space that allow the JFC to conduct OMFTS and STOM. The goal of OMFTS and STOM is to place a combat force in the threat's rear.

MPF(F) ships are the platforms that will sustain in-theater logistics, communications, and medical capabilities.[33] With no BSA, logistics sustainment moves offshore to the MPF(F) and becomes the combat force's waterborne BSA. The BSA shifts from a linear battlefield and is modified to effectively support the nonlinear battlefield that Sea Power 21 en-

visions. The MPF(F) will support the combat elements of a MAGTF, MEB, or joint task force (JTF) and the combat support (CS) and combat service support (CSS) elements assigned to them. The MPF(F) will be an integral part of the sea base.[34]

Proposed MPF(F) Capabilities

The MPF(F) must be a part of the total force package and contribute to joint mission accomplishment by force closure; JTF interoperability, sustainment, reconstitution, and redeployment.[35] Force closure is the joining of Marines or joint forces deployed from CONUS with their equipment loaded on the ships. JTF interoperability is the ability to reinforce the MAGTF assault force already committed to combat. The MPF(F) will not be a combatant, and it will not have forcible-entry capability.[36]

Sustaining the assault force ashore is a judicious use of CSS resources. The MPF(F) must carry provisions to support a MEB ashore for 30 days and provide maintenance for all wheeled, tracked, and aviation assets. Reconstitution and redeployment of the force in theater at sea is required so equipment stored aboard the MPF(F) can be employed in follow-on missions.[37]

Research and development will be required to integrate new technologies to support the MPF(F)'s requirements. The areas that will require further vision and innovation are selective onload/offload of cargo and internal ships systems (such as automated warehousing; item, pallet, container operations; RO/RO systems; and cargo flow patterns). An additional effort must be given to external ship systems (such as ramps, lighterage, and other craft interfaces), modular systems or subsystem concepts (such as joint command and control modules and additional berthing modules) as well as aircraft interfaces for vertical replenishment and reception of deployed forces.[38] An automated inventory-management system that can receive, store, maintain, manage, and deploy equipment and supplies for sustained logistics support is a necessity.[39]

The MPF(F) will allow the logistics base to maneuver in an open sea and will reduce double handling of materiel by cutting out the intermediate step of establishing shore-based logistics activities.[40] The logistical support required to sustain the force ashore will be reduced and the operational pause associated with that effort would be eliminated. The selective offload of equipment and materiel will be the centerpiece of MPF(F)'s sea-based support.[41]

In addition to operating over the horizon, the MPF(F) must perform its offload mission in up to Sea State 3, perform essential ship functions in up to Sea State 5, and survive in up to Sea State 8.[42] It must also meet level I survivability requirements as defined in Office of the Chief of Naval Operations Instruction 9070.1, *Survivability Policy for Surface Ships of the U.S. Navy*, which is the basic level of surface-ship survivability.[43]

The MPF(F) must be reconfigurable to accept the requirements of different JTF task-organized missions. Logisticians will be required to set up an authorized stockage list (ASL) with limited time and then wargame the different scenarios to ensure that the ASL can support the mission, plus a 10-percent overage to make up for any shortcomings in the plan. Selective offload becomes a must. The MPF(F) will provide a pull-type supply system chain with the flavor of a pre-positioned push-type supply system. The MPF(F) becomes the warehouse, and transportation assets become the just-in-time logistics (JITL) facilitators.

MPF(F) Challenges and Future Needs

The MPF(F) faces several challenges before it can become a reality. One challenge is to ensure the MPF(F) can function along with current transportation systems (such as cargo helicopters, amphibious assault vehicles, utility landing craft, and air cushion landing craft) as well as future transportation systems (such as motor vessels, advanced amphibious assault vehicles, replacement utility landing craft, and heavy-lift air cushion landing craft). The bottom line is, the efficient use and implementation of the MPF(F) will depend on "high-speed, reliable and survivable surface craft and aircraft able to deliver logistics support where and when needed."[44] The current reality is, the legacy systems will be used as long as possible, but a smooth transition to future systems must be planned.

The MPF(F) will be the hub of all logistics support for combat forces conducting offensive operations in the littoral region, because an amphibious forces' center of gravity (COG), must be protected. Combatant ships accompanying an MPF(F) must protect it with extreme vigilance. Planners expect future operations to be conducted along with the emerging expeditionary strike group, which is envisioned to provide protection. If not, combat forces ashore will be similar to the Marines on Guadalcanal in 1942, except worse. They will be deep in enemy territory with no supplies or beachhead.

Artificial intelligence systems and expert systems will be required to support JITL for a

smaller logistics footprint ashore. An expert system will allow logisticians to identify the location of the nearest supply item and its availability. The expert system will then order and arrange the quickest and most cost-effective method of delivery for the supply item. The expert system will also reduce manpower by eliminating some of the clerical duties associated with the supply chain. The system will automatically reorder supplies as they are removed from shelves.

Another major benefit derived from using the expert system is the ability to run extensive logistical models in support of a landing force to obtain possible logistical courses of action. A sea-based logistical expert system will greatly increase the efficiency in time and the manpower needed to support a forward-deployed unit, which will directly correlate into more combat power with greater ability and agility. The highly automated nature of an "anticipated pull" expert logistics system will allow a "management by exception" approach. The enhanced knowledge of in-transit inventories and total asset visibility will refine the allocation of transportation resources, improve item availability, and increase the velocity of materiel movement through the entire supply chain.[45]

A Great Concept

The MPF(F) is a great concept that is ready to blossom in conjunction with OMFTS and sea-based logistics. The MPF(F) will—

- Use current aviation and amphibious assets as well as future assets.
- Mutually support Sea Power 21, electromagnetic wave, OMFTS, and STOM.
- Eliminate dependence on fixed forward logistical bases in questionable foreign areas.
- Provide the platform for force closure, JTF interoperability, sustainment, and reconstitution of the maneuver force for further missions.
- Capitalize on current and future technology.
- Form the COG of the maneuver force, which must be protected at all costs.
- Provide all of the maneuver force's logistics.

Ground operations ashore might become untenable or reach a culmination point rapidly without logistical support. Assaulting and taking the objective in OMFTS becomes the easy task. Keeping the troops alive on the objective becomes the intensely difficult assignment. The MPF(F) is the string that ties Sea Power 21 and sea-basing into a coherent vision. ***MR***

NOTES

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